



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,018	02/07/2002	Hui Su	S01.12-0869	8761

7590 06/28/2004

Todd R. Fronek
WESTMAN CHAMPLIN & KELLY
International Centre - Suite 1600
900 South Second Avenue
Minneapolis, MN 55402-3319

EXAMINER

TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
----------	--------------

2133

3

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,018

Applicant(s)

SU ET AL.

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 6-11 and 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Satoh; Isao et al. (US 5469418 A, hereafter referred to as Satoh).

35 U.S.C. 102(b) rejection of claim 1.

Satoh teaches determining a number of sectors to be read from a disc (col. 1, lines 30-33 in Satoh teach that a track "i" is written to; Note: selecting track "i" is a means for determining a number of sectors to be written to since a track is made up of a known finite number of sectors, hence specifying a track to be written to inherently specifies a pre-determined number of sectors to be written to); reading data from all sectors of the number of sectors during a first disc revolution (col. 1, lines 31-33 and Figure 1 in Satoh teaches that data is read from all the sectors in a track in a single revolution); identifying error sectors having a number of errors above a predetermined threshold (col. 4, lines 2-16 in Satoh teach that after the track is read the track is monitored to verify if the number of errors in a sector exceeds a prescribed number threshold of allowable errors; hence Satoh teaches identifying the number of errors in a sector of a track having a

number of errors above a predetermined threshold); correcting the data from the error sectors (col. 3, lines 40-43 in Satoh teaches that errors are corrected); and writing corrected data to the error sectors during a second disc revolution (col. 4, lines 14-16 in Satoh teach that correct data is rewritten to the sector or an alternate sector; Note: Satoh teaches that writing place a track at a time, hence rewriting the data takes place in a single revolution, see Figures 1 and 3 in Satoh; Note Figures 1 and 3 are substantially with Figure 3 being read/write timing for a disc with two heads for reading).

35 U.S.C. 102(b) rejection of claim 2.

Col. 1, lines 17-20 in Satoh teach counting the number of errors, which is step for tracking errors.

35 U.S.C. 102(b) rejection of claims 6 and 7.

Col. 4, lines 3-6 and Figures 1 and 3 in Satoh teach that the written sectors are read in an intermediate revolution occurring between the first write revolution and a revolution for data to be rewritten.

35 U.S.C. 102(b) rejection of claim 8.

Buffer memories RAM-1 and RAM-2 in Figure 2 of Satoh store data during read.

35 U.S.C. 102(b) rejection of claim 9.

See ECC-1 and ECC-2 in Figure 2 of Satoh.

35 U.S.C. 102(b) rejection of claims 10 and 18.

Satoh teaches a rotating disc having a disc surface; a transducer configured to read and write data from the disc surface; a buffer memory; and a controller (see Figure 2 in Satoh). Satoh teaches determining a number of sectors to be read from a disc (col. 1, lines 30-33 in Satoh teach that a track "i" is written to; Note: selecting track "i" is a means for determining a number of sectors to be written to since a track is made up of a known finite number of sectors, hence specifying a track to be written to inherently specifies a pre-determined number of sectors to be written to); reading data from all sectors of the number of sectors during a first disc revolution (col. 1, lines 31-33 and Figure 1 in Satoh teaches that data is read from all the sectors in a track in a single revolution); identifying error sectors having a number of errors above a predetermined threshold (col. 4, lines 2-16 in Satoh teach that after the track is read the track is monitored to verify if the number of errors in a sector exceeds a prescribed number threshold of allowable errors; hence Satoh teaches identifying the number of errors in a sector of a track having a number of errors above a predetermined threshold); correcting the data from the error sectors (col. 3, lines 40-43 in Satoh teaches that errors are corrected); and writing corrected data to the error sectors during a second disc revolution (col. 4, lines 14-16 in Satoh teach that correct data is rewritten to the sector or an alternate sector; Note: Satoh teaches that writing place a track at a time, hence rewriting the data takes place in a single revolution, see Figures 1 and 3 in

Satoh; Note Figures 1 and 3 are substantially with Figure 3 being read/write timing for a disc with two heads for reading).

35 U.S.C. 102(b) rejection of claims 11 and 19.

Col. 1, lines 17-20 in Satoh teach counting the number of errors, which is step for tracking errors.

35 U.S.C. 102(b) rejection of claims 15 and 20.

Col. 4, lines 3-6 and Figures 1 and 3 in Satoh teach that the written sectors are read in an intermediate revolution occurring between the first write revolution and a revolution for data to be rewritten.

35 U.S.C. 102(b) rejection of claim 16.

See ECC-1 and ECC-2 in Figure 2 of Satoh.

35 U.S.C. 102(b) rejection of claim 17.

Buffer memories RAM-1 and RAM-2 in Figure 2 of Satoh store data during read.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2133

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 3-5 and 12-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh; Isao et al. (US 5469418 A, hereafter referred to as Satoh).

35 U.S.C. 103(a) rejection of claims 3-5 and 12-14.

Satoh substantially teaches the claimed invention described in claims 1, 2, 10 and 11 (as rejected above). Note: Col. 4, lines 1-16 in Satoh is substantially a masking means for correcting and rewriting a sector of a track and Buffer memories RAM-1 and RAM-2 store Masking information on particular sectors to be written to during error correction. However Satoh does not explicitly teach the specific use of a mask.

The Examiner asserts that Col. 4, lines 1-16 in Satoh is substantially a masking means for correcting and rewriting a sector of a track and that using a mask to implement an alternative embodiment of the teachings taught in the Satoh patent would have been an obvious engineering design choice based on hardware and software requirements of the design.

Art Unit: 2133

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Satoh by including use of a mask. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a mask would have provided the opportunity to implement an alternative embodiment the design taught in Satoh based on obvious engineering design choice such as hardware and software requirements of the design.

Conclusion

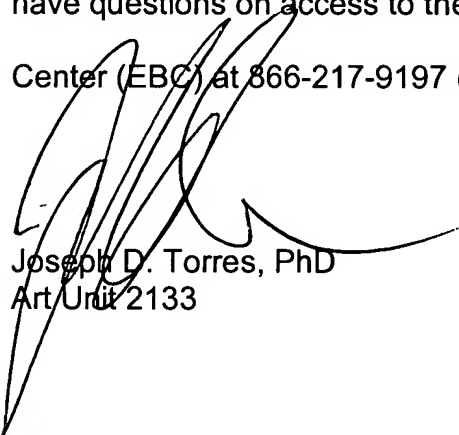
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Choo; SweeKieong et al. (US 6728053 B2) teaches reducing the number of disc revolutions required during read retry operations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2133

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
Art Unit 2133